

IN THE DRAWINGS

The Drawings are amended as follows:

On Drawing Sheet 4, Figures 5A, 5B and 5C are amended to add the legend, "Prior Art"

On Drawing Sheet 5, Figure 6 is amended to add the legend, "Prior Art"

On Drawing Sheet 6, Figures 7 and 8 are amended to add the legend, "Prior Art"

Attachment: Replacement Drawing Sheet 4 including FIGS. 5A, 5B and 5C;
Replacement Drawing Sheet 5 including FIG. 6; and
Replacement Drawing Sheet 6 including FIGS. 7 and 8.

REMARKS/ARGUMENTS

Reconsideration and withdrawal of the rejections of the application are respectfully requested in view of the amendments and remarks herewith, which place the application into condition for allowance. The present amendment is being made to facilitate prosecution of the application.

I. STATUS OF THE CLAIMS AND FORMAL MATTERS

Claims 1-9 are currently pending. Claims 7-9 are hereby added. Claims 1 and 6 are independent. Claims 1, 2 and 6 are hereby amended. No new matter has been introduced. Support for this amendment is provided throughout the Specification as originally filed.

Changes to the claims are not made for the purpose of patentability within the meaning of 35 U.S.C. §101, §102, §103, or §112. Rather, these changes are made simply for clarification and to round out the scope of protection to which Applicants are entitled.

II. OBJECTIONS TO THE DRAWINGS

The drawings have been amended to overcome the objections in the Office Action.

Applicants respectfully request withdrawal of the objections to the drawings.

III. OBJECTIONS TO THE SPECIFICATION

The Abstract section of the specification has been amended as described herein above to overcome the objections in the Office Action.

Applicants respectfully request withdrawal of the objections to the specification.

IV. OBJECTIONS TO THE CLAIMS

Claims 1 – 4 and 6 were objected to because of certain informalities.

Claims 1 – 4 and 6 are amended as shown herein above to overcome the objections.

Applicants respectfully request withdrawal of the objections to the claims.

V. REJECTIONS UNDER 35 U.S.C. §102

Claims 1-6 were rejected under 35 U.S.C. §102 as allegedly anticipated by U.S. Patent No. 6,546,202 to Onuzuka et al. (hereinafter, merely “Onuzuka”).

Applicants respectfully traverse this rejection.

Independent claim 1 is representative and recites, *inter alia*:

“a rear barrel;

...

a fixed barrel attached to the rear barrel;

...

position-detecting means attached to the rear barrel and provided in said lens barrel within said fixed barrel for detecting a position of the lens barrel.” (Emphasis added)

As understood by the Applicants, Onozuka discloses, in relevant part, a lens driving apparatus having a photo detector 96 attached to the shutter unit frame 93. Onozuka col. 12, line 1 and FIG. 6. It is clear from FIG. 6 the phot-detector 96 is not attached to the rear barrel.

In contrast, claim 1 recites, “position-detecting means attached to the rear barrel.” As described in Applicants’ specification and shown in FIGS. 1A-1C, the fin-shaped projection on the second group lens frame protrudes towards the rear barrel. The fin-shaped projection extends approximately in parallel with an optical axis of the image-pickup lens portion and is arranged to be positioned outside the outer circumferential surface of the third group lens frame. The photo-

sensor for detecting the fin-shaped projection is mounted on the rear barrel. Publ. App. par. [0062]. Accordingly, the range of moving the focusing lens portion between the collapsed position and wide position is limited. Thus, in the present invention, the fin-shaped projection can be provided on the second group lens frame and detected by the photo-sensor mounted on the rear barrel. Publ. App. par. [0069].

Claim 1 is patentable over Onozuka because that reference does not disclose each and every element recited in the claim. In particular, Onozuka does not disclose the recited relationship of the photo-sensor as recited in claim 1.

For reasons similar or somewhat similar to those described above with regard to independent claim 1, independent claim 6 is also believed to be patentable.

DEPENDENT CLAIM 5

Claim 5 depends from claim 1 and should be allowable for at least the same reasons.

Further, claim 5 recites, *inter alia*:

“wherein a position of said second group lens frame is detected by said position-detecting means between said collapsed position and a wide position, and a position of said second group lens frame is not detected by the position-detecting means between the wide position and the telephoto position.” (Emphasis added).

This feature of the present invention is not disclosed in Onozuka. The Office Action points to Onozuka col. 15, lines 4-21. However, at that location, Onozuka is only describing the movement and relationships of the respective first, second and third lens groups in going from the wide mode to the zoom mode. There is no suggestion the photo detector 96 is not detecting the position of the second lens group while transitioning between the modes. Indeed, Onozuka

implies the photo detector detects the position of the second lens group at two positions and, therefore, can detect a wide wait position and a tele wait position. Onozuka col. 12, lines 37-40.

Hence dependent claim 5 is patentable over Onozuka for this additional reason.

DEPENDENT CLAIM 9

Claim 9 depends from claim 1 and should be allowable for at least the same reasons.

Further, claim 9 recites, *inter alia*:

“wherein the position-detecting means includes a fin-shaped projection attached to the movable lens barrel and projecting towards the rear barrel and a photo-sensor attached to the rear barrel at a position to detect the second group lens frame immediately before coming in contact with the third group lens frame.”

Claim 9 adds the feature that the photo-sensor is attached to the rear barrel in a position to detect, and thus avoid, a collision between the second group lens frame and the third group lens frame. When focusing in a position between the collapsed state (FIG. 1A) and the wide position (FIG. 1B), the second group lens frame can collide with the third group lens frame (which includes the focusing lens). However, when moving between the wide state (FIG. 1B) and telephoto state in (FIG. 1C), the second group lens frame moves forward, so that no collision will occur between lenses. Accordingly, the present invention detects the zoom position of the lens and limit the range of movement of the focusing lens portion between the collapsed position and wide position. Thus, in the present invention, the projection provided on the second group lens frame is detected by the photo-sensor mounted on the rear barrel so that the zoom state of the lens can be detected.

That is, because the second group lens frame always moves forward between the collapsed state (FIG. 1A) and the telephoto state (FIG. 1C), the detecting projection is arranged

to enter a detecting portion of the photo-sensor mounted on the rear barrel in the collapsed state and to move away from the photo-sensor in the wide state, thereby enabling the wide position to be detected.

Accordingly, the photo-sensor can enable a full movement of the focusing lens between the wide state and telephoto state and limit the range of focusing lens movement (to avoid a collision) between the wide state and the collapsed state. Therefore, a collision between the second group lens frame and third group lens frame (which includes the focusing lens portion) is avoided.

Onozuka does not suggest the limitations recited in claim 9 and, moreover, does not even recognize the problem avoided by the present invention.

Hence dependent claim 9 is patentable over Onozuka for this additional reason.

VI. OTHER DEPENDENT CLAIMS

The other dependent claims are dependent from one of the claims discussed above and are therefore believed patentable for at least the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

CONCLUSION

Claims 1-9 are in condition for allowance. In the event the Examiner disagrees with any of statements appearing above with respect to the disclosure in the cited reference, or references, it is respectfully requested that the Examiner specifically indicate those portions of the reference, or references, providing the basis for a contrary view.

Please charge any additional fees that may be needed, and credit any overpayment, to our Deposit Account No. 50-0320.

In view of the foregoing amendments and remarks, it is believed that all of the claims in this application are patentable and Applicants respectfully request early passage to issue of the present application.

Respectfully submitted,

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